

What is claimed is:

1. An apparatus comprising:
an optoelectronic TO-can having at least an external surface, the optoelectronic
5 TO-can including:
a TO-can having a width; and
an optoelectronic device in the TO-can, the optoelectronic device having an
optical axis; and
an extension board connected to the optoelectronic TO-can, the extension board
10 having a width less than twice the width of the TO-can, the extension board including:
a first set of one or more contacts positioned to connect to a printed circuit
board positioned at least substantially parallel to the optical axis of the
optoelectronic device in the TO-can;
a second set of one or more contacts positioned to connect to the
15 optoelectronic TO-can; and
an integrated circuit mounted on the extension board, the integrated circuit
coupled to at least one contact of the first set of one or more contacts and at least
one contact of the second set of one or more contacts.
- 20 2. The apparatus of claim 1, wherein a lateral distance on a surface of the extension
board between the integrated circuit and the optoelectronic TO-can is less than twice the
width of the TO-can.
3. The apparatus of claim 2, wherein the integrated circuit is mounted on the surface
25 of the extension board facing away from the optoelectronic TO-can.
4. The apparatus of claim 1, wherein the optoelectronic device includes an
optoelectronic receiver.
- 30 5. The apparatus of claim 4 , wherein the integrated circuit includes circuitry
processing one or more signals received from the optoelectronic receiver.

6. The apparatus of claim 1, wherein the optoelectronic device includes an optoelectronic transmitter.

7. The apparatus of claim 6, wherein the integrated circuit includes an optical transmitter driver.

8. The apparatus of claim 1, wherein the extension board includes a rigid board.

9. The apparatus of claim 1, wherein the extension board includes a flexible board.

10. The apparatus of claim 1, further comprising:
one or more electrical connections between at least the external surface of the optoelectronic TO-can to the extension board, wherein the one or more electrical connections ground the extension board to the external surface of the optoelectronic TO-can.

11. The apparatus of claim 10, wherein at least one of the one or more electrical connections occupy a gap between the optoelectronic TO-can and the extension board connected to the optoelectronic TO-can.

12. The apparatus of claim 1, further comprising:
the printed circuit board.

13. An apparatus comprising:

an optoelectronic TO-can having at least an external surface, the optoelectronic TO-can including:

a TO-can having a width; and

an optoelectronic device in the TO-can, the optoelectronic device having an optical axis;

a flexible board having a width less than twice the width of the TO-can, the flexible board including:

a TO-can portion positioned at least substantially perpendicular to the optical axis of the optoelectronic device in the TO-can;

a printed circuit board portion positioned at least substantially parallel to

the optical axis of the optoelectronic device in the TO-can; and
one or more contacts on the printed circuit board portion, the one or more
contacts positioned to connect to a printed circuit board positioned at least
substantially parallel to the optical axis of the optoelectronic device in the TO-can;
5 and
one or more electrical connections between at least the external surface of the
optoelectronic TO-can to the TO-can portion of the flexible board.

14. The apparatus of claim 13, wherein the optoelectronic device includes an
10 optoelectronic receiver.

15. The apparatus of claim 14, wherein the optoelectronic device includes an
optoelectronic transmitter.

15 16. The apparatus of claim 13, wherein at least one of the one or more conductive
connections includes conductive epoxy.

17. The apparatus of claim 13, wherein at least one of the one or more conductive
connections includes at least one of solder, alloy, and metal.
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18. The apparatus of claim 13, wherein the one or more conductive connections
ground the flexible board to the external surface of the optoelectronic TO-can.

19. The apparatus of claim 18, wherein the one or more conductive connections
25 ground a surface of the flexible board to the external surface of the optoelectronic TO-can,
the surface of the flexible board facing toward the optoelectronic TO-can.

20. The apparatus of claim 13, further comprising:
an integrated circuit mounted on the flexible board.
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21. The apparatus of claim 13, wherein at least one of the one or more electrical
connections occupy a gap between the optoelectronic TO-can and the flexible board
connected to the optoelectronic TO-can.

22. The apparatus of claim 13, further comprising:
the printed circuit board.
23. An apparatus comprising:
5 an optoelectronic TO-can having at least an external surface, the optoelectronic TO-can including:
a TO-can having a width; and
an optoelectronic device in the TO-can, the optoelectronic device having an optical axis; and
10 a rigid board connected to the optoelectronic TO-can, the rigid board positioned at least substantially perpendicular to the optical axis of the optoelectronic device in the TO-can, the rigid board having a width less than twice the width of the TO-can, the rigid board including:
a first surface facing toward the optoelectronic TO-can;
15 a second surface facing away from the optoelectronic TO-can;
a first set of one or more contacts on the first surface, the first set of one or more contacts positioned to connect to the optoelectronic TO-can; and
a second set of one or more contacts on the second surface, the second set of one or more contacts positioned to connect to a printed circuit board positioned
20 at least substantially parallel to the optical axis of the optoelectronic device in the TO-can.
24. The apparatus of claim 23, wherein the optoelectronic device includes an optoelectronic receiver.
25. The apparatus of claim 23, wherein the optoelectronic device includes an optoelectronic transmitter.
26. The apparatus of claim 23, further comprising:
30 an integrated circuit mounted on the rigid board.
27. The apparatus of claim 23, further comprising:
one or more electrical connections between at least the external surface of the optoelectronic TO-can to the rigid board, wherein the one or more electrical connections

ground the rigid board to the external surface of the optoelectronic TO-can.

28. The apparatus of claim 27, wherein at least one of the one or more electrical connections occupy a gap between the optoelectronic TO-can and the rigid board
5 connected to the optoelectronic TO-can.

29. The apparatus of claim 23, further comprising:
the printed circuit board.

10 30. An apparatus comprising:
an optoelectronic module comprising:
an optoelectronic TO-can having at least an external surface, the
optoelectronic TO-can including:
a TO-can having a width; and
15 an optoelectronic device in the TO-can, the optoelectronic device
having an optical axis; and
an extension board connected to the optoelectronic TO-can, the extension
board having a width less than twice the width of the TO-can, the extension board
including:
20 a first set of one or more contacts positioned to connect to a printed
circuit board positioned at least substantially parallel to the optical axis of
the optoelectronic device in the TO-can;
a second set of one or more contacts positioned to connect to the
optoelectronic TO-can; and
25 an integrated circuit mounted on the extension board, the integrated
circuit coupled to at least one contact of the first set of one or more contacts
and at least one contact of the second set of one or more contacts.

31. The apparatus of claim 30, wherein the optoelectronic module includes an
30 optoelectronic transceiver.

32. The apparatus of claim 30, wherein the optoelectronic module includes an
optoelectronic transponder.

33. An apparatus comprising:

an optoelectronic module comprising:

5 an optoelectronic TO-can having at least an external surface, the
optoelectronic TO-can including:

a TO-can having a width; and

an optoelectronic device in the TO-can, the optoelectronic device
having an optical axis;

10 a flexible board having a width less than twice the width of the TO-can, the
flexible board including:

a TO-can portion positioned at least substantially perpendicular to
the optical axis of the optoelectronic device in the TO-can;

15 a printed circuit board portion positioned at least substantially
parallel to the optical axis of the optoelectronic device in the TO-can; and

one or more contacts on the printed circuit board portion, the one or
more contacts positioned to connect to a printed circuit board positioned at
least substantially parallel to the optical axis of the optoelectronic device in
the TO-can; and

20 one or more electrical connections between at least the external surface of
the optoelectronic TO-can to the TO-can portion of the flexible board.

34. The apparatus of claim 33, wherein the optoelectronic module includes an
optoelectronic transceiver.

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35. The apparatus of claim 33, wherein the optoelectronic module includes an
optoelectronic transponder.

36. An apparatus comprising:

30 an optoelectronic module comprising:

an optoelectronic TO-can having at least an external surface, the
optoelectronic TO-can including:

a TO-can having a width; and

an optoelectronic device in the TO-can, the optoelectronic device

having an optical axis; and

a rigid board connected to the optoelectronic TO-can, the rigid board positioned at least substantially perpendicular to the optical axis of the optoelectronic device in the TO-can, the rigid board having a width less than twice the width of the TO-can, the rigid board including:

a first surface facing toward the optoelectronic TO-can;

a second surface facing away from the optoelectronic TO-can;

a first set of one or more contacts on the first surface, the first set of one or more contacts positioned to connect to the optoelectronic TO-can;

and

a second set of one or more contacts on the second surface, the second set of one or more contacts positioned to connect to a printed circuit board positioned at least substantially parallel to the optical axis of the optoelectronic device in the TO-can.

37. The apparatus of claim 36, wherein the optoelectronic module includes an optoelectronic transceiver.

38. The apparatus of claim 36, wherein the optoelectronic module includes an optoelectronic transponder.